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09/957,013	09/20/2001	Richard B. Wheeler	82249DMW	2451

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EXAMINER	
HENN, TIMOTHY J	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/957,013	WHEELER ET AL.	
	Examiner	Art Unit	
	Timothy J. Henn	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,14-16,29,31-36 and 39-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,14-16,29,31-36,39-41,44-47 and 50-52* is/are rejected.

7)☒ Claim(s) *42,43,48 and 49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 31 October 2005 have been fully considered but they are not persuasive. Regarding Applicant's arguments that Sano does not disclose applying a scene balance correction independent of the metadata the examiner notes that Figure 3 and column 6 clearly discloses such a process. In Figure 3 of Sano it is determined if image processing is necessary in step #3 and a type of image processing is set in step #4. After this process, image processing is performed in step #5 independent of the determination in step #3. Sano discloses in column 6, lines 47-50 that the image processing performed in step #5 is "γ correction and white balance correction" (i.e. scene balance) as claimed.

2. Regarding Applicant's arguments that Sano does not disclose a noise defect, the examiner notes that the term "noise" is a very broad term and that the claims do no specify any specific type of noise (e.g. random noise, fixed pattern noise, etc). For example, the IEEE Standard Dictionary of Electrical and Electronics Terms Sixth Edition gives one definition for noise on page 690 as "[a]ny unwanted variation in a signal". Poor contrast can be considered an "unwanted variation" and since the correction process of Sano improves the contrast, it can be said to remove the "unwanted variation" or remote the noise defect as claimed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2-4, 6, 9, 10, 31-33, 35, 36, 39, 41, 45 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano (US 5,739,924).

[claim 1]

Regarding claim 1, Sano discloses a method for processing a captured image in order to improve the appearance of a viewed image generated from the captured image, the method comprising the steps of: collecting metadata related to image capture that is unique to each image that is captured, wherein the metadata is capable of indicating whether the specific types of image defects are likely to be present in the viewed image generated from the captured image (c. 4, ll. 36-58); predicting the presence of one or more image defects exclusive of a scene balance defect, said predicting being based at least in part on the meta data, thereby generating processing application criteria which indicate a level of image defect that if left untreated would reduce the perceived quality of the viewed image (figure 3, step #3; c. 6, ll. 43-59); selecting one or more correction processes to employ on the captured image based on the process application criteria (figure 3; step #4; c. 6, ll. 43-59); applying a scene

balance correction process to the captured image independent of the meta data (figure 3, step #5; c. 6, ll. 43-59) and applying the one or more selected correction processes to the captured image to generate the viewed image (Figure 3; Item #7; c. 6, ll. 43-59).

[claim 2]

Regarding claim 2, Sano discloses metadata which includes scene, camera or demographic data related to the image capture (c. 4, ll. 36-58).

[claim 3]

Regarding claim 3, Sano discloses predicting the severity (i.e. existent or non-existent) of the image defect and alters the strength of the corresponding correction process in response to the degree of severity (i.e. applying the process if the defect exists or non applying the process if it is non-existent).

[claim 4]

Regarding claim 4, Sano discloses metadata which is collected at the time of image capture (c. 4, ll. 36-58).

[claim 6]

Regarding claim 6, Sano discloses an image defect which is a noise defect (i.e. an image having poor contrast can be said to be "noisy") and the metadata is exposure time and camera lens f-number (c. 8, ll. 40-56).

[claim 9]

Regarding claim 9, Sano discloses an image defect which is a sharpness defect (i.e. contrast) and the metadata is exposure time (c. 8, ll. 40-56).

[claim 10]

Regarding claim 10, Sano discloses collecting metadata related to display parameters of the viewed image, wherein the metadata is capable of indicating whether the specific types of image defects are likely to be present in the viewed image (c. 4, ll. 36-58; as broadly as claimed "brightness of a subject" can be read as being "related to display parameters" since the display of the viewed image would inherently change as the brightness of the subject is changed).

[claim 36]

Regarding claim 36; Sano discloses a system for processing a captured image in order to improve the appearance of a final viewed image generated from the captured image, the system comprising: an image capture device to capture an image (figure 2; a camera is required in order to produce film including pictures as shown and described); a photofinishing system utilizing a photofinishing control system to produce the final viewed image (figure 1, item 5); means for recording meta data, said meta data being capable of indicating whether specific types of image defects are likely to be present in the final viewed image (c. 4, ll. 36-58); means for storing and alter transferring to the photofinishing control system at least one of the parameters (figure 3, step #1; c. 4, ll. 36-58; c. 6, ll. 28-39); wherein the photofinishing control system has a means for predicting from at least one of the image capture parameters and current printing parameters, whether the captured image will have a level of one or more image defects, exclusive of a scene defect, that if left untreated would reduce the perceived quality of the final viewed image (figure 3; step #3; c. 6, ll. 42-50); means for correcting scene balance in the captured image independent of said means for predicting (figure 3, step

#5; c. ll. 42-50) and means for applying correction of said one or more image defects in the captured image via automated techniques when the prediction means indicates a level of said one or more image defects that if left untreated would reduce the perceived quality of the final viewed image (figure 3; step #7; c. 6, ll. 42-50).

[claim 31]

Regarding claim 31, Sano discloses metadata which includes scene, camera or demographic data related to the image capture (c. 4, ll. 36-58).

[claim 32]

Regarding claim 32, Sano discloses predicting the severity (i.e. existent or non-existent) of the image defect and alters the strength of the corresponding correction process in response to the degree of severity (i.e. applying the process if the defect exists or non applying the process if it is non-existent).

[claim 33]

Regarding claim 33, Sano discloses metadata which is collected at the time of image capture (c. 4, ll. 36-58).

[claim 35]

Regarding claim 35, Sano discloses collecting metadata related to display parameters of the viewed image, wherein the metadata is capable of indicating whether the specific types of image defects are likely to be present in the viewed image (c. 4, ll. 36-58; as broadly as claimed "brightness of a subject" can be read as being "related to display parameters" since the display of the viewed image would inherently change as

the brightness of the subject is changed).

[claim 45]

Regarding claim 45, Sano discloses a system for processing a captured image, the system comprising: means for collecting meta data related to the captured image (figure 2; c. 4, ll. 36-58); means for computing predictions of a plurality of different perceived quality reducing defects in the captured image using said meta data, said plurality of defects being exclusive of scene balance (figure 3, step #3; c. 6, ll. 42-50); means for adjusting scene balance of the captured image independent of said predictions (figure 3, step #5; c. 6, ll. 42-50); and means for applying one or more of a plurality of different correction processes to the captured image responsive to the predictions (figure 3, step #7; c. 6, ll. 42-59).

[claim 47]

Regarding claim 47, Sano discloses a system which predicts both presence and severity (c. 6, ll. 42-50; i.e. whether correction is necessary).

[claims 39 and 41]

Claims 39 and 41 are method claims corresponding to apparatus claims 45 and 47. Therefore, claims 39 and 41 are analyzed and rejected as previously discussed with respect to claims 45 and 47.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 5 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924) in view of Shiota et al. (US 6,011,547).

[claims 5 and 34]

Regarding claims 5 and 34, Sano discloses all limitations except for collecting metadata at a time other than the time of image capture. However, Shiota discloses that image metadata can be automatically entered at time of capture or alternatively be entered by the camera user (c. 2, ll. 19-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the user to later determine the metadata information as an alternative to automatically generating the metadata at the time of image capture as taught by Shiota.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924) in view of Feldis, III (US 2003/0007078).

[claim 7]

Regarding claim 7, Sano discloses all limitations except for an image defect which is a redeye defect. However, Feldis, III discloses correcting redeye defects on the basis of whether or not a flash device was used during exposure (paragraph 0035). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform redeye correction as taught by Feldis, III to remove redeye from images when it is predicted to be present by the method of Sano.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924) in view of Silverbrook (US 6,727,951).

[claim 8]

Regarding claim 8, Sano discloses all limitations except for an image defect which is a tonescale defect. However, Silverbrook discloses correcting tonescale defects based on a determined light level (i.e. "respective illumination levels of the subject and background"; c. 2, l. 25 - c. 3, l. 13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform tonescale correction as taught by Silverbrook to create images with colors that are stronger, deeper and richer.

9. Claims 11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924).

[claim 11]

Regarding claim 11, Sano discloses all limitations (see claim 1) except for instructions stored in a storage medium for causing a computer to perform the claimed steps. Official Notice is taken that it is notoriously well known in the art to perform image analysis and processing methods in computers using software or instruction stored in a computer storage medium. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the steps of Sano in a computer through the use of software to allow the software component to take

advantage of the processing power of easily available off the shelf computer processors and systems to implement the method of Sano.

[claim 14]

Regarding claim 14, Sano discloses all limitations (see claims 1 and 13) except for an image capture which is an electronic capture. Official Notice is taken that it is notoriously well known to capture and process images using electronic capture devices such as digital cameras or digital scanners to create images without the need for expensive film development steps. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Sano using a digital camera or digital scanner to avoid expensive film development steps in the creation of images.

[claims 15 and 16]

Regarding claims 15 and 16, see claim 14.

10. Claims 29 and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924) in view of Maruyama et al. (US 5,323,203).

[claim 52]

Regarding claim 52, Sano discloses a system for processing a captured image, said system comprising: means for collecting meta data related to the captured image (c. 4, ll. 36-58), means for computing a prediction of presence and severity (i.e. necessary of correction) of defects in the captured image using the meta data (figure 3, step #3; c. 6, ll. 42-50) and means for applying a defect correction process on the

captured image in response to the prediction (figure 3, step #7; c. 6, ll. 42-50). However, Sano does not disclose correcting a redeye defect based on meta data which is a demographic characteristic related to redeye.

Maruyama discloses that the redeye phenomenon readily occurs in some races (c. 6, ll. 34-43). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use racial data (i.e. demographic data) to predict redeye in the images captured by Sano to apply a redeye correction process in the system of Sano for images which redeye is likely to occur.

[claim 50]

Claim 50 is a method clam corresponding to apparatus claim 52. Therefore, claim 50 is analyzed and rejected as previously discussed with respect to claim 52.

[claim 51]

Sano in view of Maruyama discloses all limitations (see claim 50) except for instructions stored in a storage medium for causing a computer to perform the claimed steps. Official Notice is taken that it is notoriously well known in the art to perform image analysis and processing methods in computers using software or instruction stored in a computer storage medium. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the steps of Sano in a computer through the use of software to allow the software component to take advantage of the processing power of easily available off the shelf computer processors and systems to implement the method of Sano in view of Maruyama.

[claim 29]

Regarding claim 29, Maruyama discloses linking race of a human subject to the occurrence of redeye (c. 6, ll. 34-43).

11. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924).

[claim 44]

Sano discloses all limitations (see claim 39) except for instructions stored in a storage medium for causing a computer to perform the claimed steps. Official Notice is taken that it is notoriously well known in the art to perform image analysis and processing methods in computers using software or instruction stored in a computer storage medium. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the steps of Sano in a computer through the use of software to allow the software component to take advantage of the processing power of easily available off the shelf computer processors and systems to implement the method of Sano.

12. Claims 40 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924) in view of Feldis, III (US 2003/0007078) in view of Silverbrook (US 6,727,951).

[claim 46]

Regarding claim 46, Sano discloses defects which includes a sharpness defect (e.g. figure 4 or figure 5) and a noise defect (e.g. figure 4 or figure 5; as broadly as

claimed, low contrast can be equated to "noise"). However, Sano does not disclose correction of tonescale and redeye defects.

Feldis, III discloses correcting redeye defects on the basis of whether or not a flash device was used during exposure (paragraph 0035). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform redeye correction as taught by Feldis, III to remove redeye from images when it is predicted to be present by the method of Sano.

Silverbrook discloses correcting tonescale defects based on a determined light level (i.e. "respective illumination levels of the subject and background"; c. 2, l. 25 - c. 3, l. 13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform tonescale correction as taught by Silverbrook to create images with colors that are stronger, deeper and richer.

[claim 40]

Claim 40 is a method claim corresponding to apparatus claim 46. Therefore, claim 40 is analyzed and rejected as previously discussed with respect to claim 46.

Allowable Subject Matter

13. Claims 42, 43, 48 and 49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

[claims 42, 43, 48 and 49]

Regarding claims 42, 43, 48 and 49, the prior art does not teach or fairly suggest calculating intermediate parameters using meta data of an image and determining the predictions of a plurality of image quality reducing defects using the meta data and the intermediate parameters calculated from the meta data as claimed.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Henn whose telephone number is (571) 272-7310. The examiner can normally be reached on M-F 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJH
1/20/2005

NGOC-YEN VU
PRIMARY EXAMINER